

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Application for Reissue of:

MICHAEL R. HATCH and
CHAK M. LEUNG

U. S. Patent No. 5,282,103

Issued: January 25, 1994

For: MAGNETIC HEAD SUSPENSION
ASSEMBLY FABRICATED WITH
INTEGRAL LOAD BEAM AND
FLEXURE

Group Art Unit:

Examiner:

Declaration Under 37 CFR §1.175Hon. Commissioner of Patents and Trademarks
Washington, D.C. 20231

Sir:

We, MICHAEL R. HATCH and CHAK M. LEUNG, the undersigned petitioners, declare:

1. We are citizens of the United States of America and residents of Mountain View and Palo Alto, respectively, both of California.

2. We are the named inventors in United States Letters Patent No. 5,282,103 issued on January 25, 1994 and entitled, MAGNETIC HEAD SUSPENSION ASSEMBLY FABRICATED WITH INTEGRAL LOAD BEAM AND FLEXURE. United States Letters Patent No. 5,282,103 indicates that it issued from Application No. 42,906 ("the '906 application"), a continuation-in-part of Serial No. 958,516 ("the '516 application"), filed October 7, 1992, abandoned.

3. On information and belief, the entire title to the United States Letters Patent No. 5,282,103 issued on January 25, 1994 to ourselves, is vested in READ-RITE CORPORATION, having a place of business at 345 Los Coches Street, Milpitas, California 95035.

PETITIONERS further declare the following.

4. We believe United States Letters Patent No. 5,282,103 ("the '103 patent") to be, through error, and without any deceptive intention, at least partly inoperative or invalid by reason of a defective application, and that less was claimed than we had a right to claim.

5. We believe ourselves to be entitled to claims of the scope as presented which refer, in one embodiment, to a head suspension formed of a single piece of planar material, which material comprises a load beam integral

with a first member having a protrusion that faces downward, and a second member also integral with the load beam spaced apart from the first member which provides a head mounting surface, with a pair of flexure beams connecting the first and second members. These insufficiencies arose as a result of the assignee, READ-RITE CORPORATION ("READ-RITE"), its attorney's, and ourselves, through error and without deceptive intent, having failed before the '103 patent issued, to recognize that (1) the Examiner improperly designated the '906 application as a continuation-in-part application (2) the original specification and drawings contain errors with respect to the nomenclature of certain recited elements, and (3) certain disclosed embodiments were not specifically claimed.

6. These errors were discovered as a result of recent discussions involving our attorneys which took place beginning on August 24, 1995. The discussions were initiated by our attorneys in response to preliminary motion papers served upon us by the opposing party in Interference No. 103,228 to which we are a party. Interference No. 103,228 involves the '103 patent and pending application no. 07/975,352, filed November 12, 1992.

7. After reading the opposing party's preliminary motion papers, the question of whether the '103 patent had been granted in error based upon a defective application was raised by our attorneys. This was the first time that we had considered such issues. At that time, we also came to realize that the '103 patent did not claim all that we had a right to claim. This latter realization was based upon our review of the subject matter of the invention disclosed and claimed in the '103 patent, which review took place at the time of our discussions; and also upon further consideration of U.S. Patent Nos. 5,434,731 and 5,428,490, which were brought to our attention by our attorneys during those discussions. After discovery of these deficiencies, authorization was given to correct such errors by seeking the present reissue of the '103 patent.

8. Specifically, during the discussions with our attorneys it was discovered that the '906 application was filed with a form that requested a file wrapper continuation of the '516 application, but a new declaration which accompanied the preliminary amendment did not refer to the '516 application. The new declaration also did not acknowledge our duty to disclose to the Patent Office all information known to be material to patentability of our invention which became available between the October 7, 1992 filing date of the '516 application and the April 5, 1993 filing date of the '906 application, which we now understand was incumbent upon us. The Examiner, however, accepted the application and declaration without comment or objection, and designated the '906 application as a continuation-in-part of the '516 application.

9. As a result of the recent discussions with our attorneys, we now consider that the original request for a file wrapper continuation and accompanying declaration were in error for the reasons given above. It was also error on the part of our attorneys, and ourselves, without deceptive intent, to fail to recognize that the Examiner's action in accepting the '906 application as a continuation-in-part of the '516 application was improper.

10. During those same discussions, we reviewed the specification and drawings and discovered that the '103 patent included a number of errors which render claims 1-22 at least partially inoperative. Specifically, Figure 6C and the corresponding text of the specification (col. 5, lines 61-67) contains an error with respect the designation of the adhesive fillets that fasten the slider to outriggers 72. This element is designated by numeral 16 in the '103 patent, but should be listed as numeral 61 (numeral 16 is used elsewhere in the '103 patent to designate the shaped flexure opening of the embodiments shown in Figures 1A, 3, and 5A).

11. Furthermore, the specification uses terms that we now believe are unclear, misdescriptive, ambiguous, or unnecessarily limiting. For example, the language "cutout portion" may be incorrectly construed to mean that those designated regions are formed by a particular process step. Regarding the "cutout portion" in the flexure section, the specification (col. 2, lines 47-57) states,

"A U-shaped cutout portion that is formed in the flexure section adjacent to the load beam tongue delineates the shape of the tongue. In one embodiment of the invention, the flexure section includes two narrow etched legs that extend from the load beam and are disposed adjacent to the cutout portion. The narrow legs are connected by a lateral ear an the end of the flexure."

We now consider this section, as well as similar portions of the specification, to be misdescriptive for several reasons.

12. First, the "cutout" according to our invention is more accurately described as a shaped opening that may be formed in accordance with a variety of manufacturing methods (e.g., etching or stamping) that were known at the time our invention was made. Thus, the term "cutout" is indefinite since it can be misconstrued. Additionally, the "cutout portion" is described in the '103 patent as being disposed adjacent to the "narrow etched legs." We now believe this to be misdescriptive and unclear since the "cutout portion" is not a physical element that can be disposed next to or connected with another physical element. Rather, the surrounding flexure structure results from the formation of the shaped opening according to our invention. That is, it was error not to positively recite the flexure structure as comprising the tongue which extends from the load beam, the flexure beams (i.e., legs), and the transverse section (i.e., lateral ear) as defined by the shape of the formed opening.

13. Also, we believe that the terms "leg" and "lateral ear" are ambiguous, vague, and misdescriptive. The reasons are because the term "leg" is commonly interpreted as providing a vertical support structure; likewise, "ear" is often interpreted in the mechanical arts as a structure having an end that is unsupported by other structure. In other words, it was error to use these terms in describing our invention because of the different meanings they can ascribe to the corresponding elements. Both of the above mentioned constructions are incorrect with respect to our invention. Accordingly, we have amended the

specification and claims, replacing the term "leg" with "flexure beam"¹ to more clearly denote a horizontal connecting structure, and substituting "lateral ear" with "transverse section," which term is used in describing the embodiments of Figures 6A-C and Figure 7 (see col. 5, lines 54-56).

14. We believe that the errors in the specification and drawings render claims 1-22 of the '103 patent indefinite since those claims incorporate the same or similar terminology. Additionally, we believe original claims 1-22 to be indefinite as including language that recites other elements ambiguously, vaguely or without antecedent basis. It was error on the part of our attorneys, and ourselves, without deceptive intent, to fail to recognize the indefiniteness of claims 1-22 prior to the issuance of the '103 patent. It was also error to fail to recognize that the Examiner's action in allowing claims 1-22 was improper for the same reasons.

15. By way of further example, we believe claim 1 of the '103 patent to be indefinite for the reasons stated above, i.e., because it uses the terms "narrow legs," "cutout portion," and "lateral ear" when reciting essential elements of the invention. Moreover, the preamble of claim 1 recites,

"... a slider for transducing data that is recorded and read out from a surface of a rotating magnetic disk drive comprising: ..."

Here, it was error to state that data is read out from the surface of a disk drive, instead of from the surface of a rotating magnetic disc. Further, the fourth paragraph of claim 1 recites "a tongue extending from said end of said narrowed load beam section." This recitation is indefinite because there is no antecedent basis for "said narrowed load beam section." (The second paragraph of claim 1 recites "a load beam section formed with a narrowed end"). Because claims 2-22 are dependent upon, and therefore include the deficiencies of claim 1, they are also indefinite, at least for the reasons given above.

16. By amendment, the indefiniteness of the specification and drawings has been clarified by correcting phrases and inserting terminology readily recognizable to persons skilled in the art of data storage devices. Thus, amended claim 1 recites and particularly points out the relationship between the load beam, load point tongue and load supporting protrusion, the flexure beams, and the transverse part, as well as the definition of these elements with respect to the formation of the shaped opening in the flexure section. As amended, claims 1-22 clearly define our invention without any of the ambiguities and indefiniteness that was present in the claims of the '103 patent.

17. We further believe that the claims set forth in the '103 patent are deficient with respect to the omission of claims 23-35 presented herewith, to

1) The American Heritage Dictionary, Third Edition (1992) defines "beam" as: "a squared-off log or a large, oblong piece of timber, metal, or stone used especially as a horizontal support in construction." Thus, usage of the term "beam" is consistent with the specification which describes the elongated, horizontal loading element 10 as a "load beam."

which we believe ourselves to also be entitled. These insufficiencies arose as a result of the assignee READ-RITE CORPORATION, its attorneys, and ourselves, through error and without any deceptive intent, having failed, before the '103 patent issued, to have expressly claimed certain embodiments embraced by claims 23-35. These insufficiencies also arose because before the '103 patent issued, the assignee, the assignee's attorneys, and ourselves, through error and without any deceptive intent, accepted claims which did not set forth certain embodiments of the invention disclosed in the '103 patent.

18. On information and belief, these insufficiencies were not discovered until after a recent discussion on August 24, 1995 with our attorneys during which discussion we first became aware of the existence of U.S. Patent Nos. 5,434,731 (entitled, "Process For Making A One-Piece Flexure For Small Magnetic Heads"; issued July 18, 1995) and 5,428,490 (entitled "One-Piece Flexure Having An Etched Load Point Button"; issued June 27, 1995), both of which list Tracy M. Hagen as inventor ("the Hagen patents"). The Hagen patents are both divisional applications of Ser. No. 07/975,352, which application is presently involved in Interference No. 103,228 with the '103 patent. Subsequently, a question was raised as to the construction and scope of the claims of the Hagen patents. Upon review of the Hagen patents, we came to realize that much of the claimed subject matter was first disclosed, but not claimed, as various embodiments in the '103 patent.

19. Because we believe that we were the first to invent the subject matter claimed in the Hagen patents, we intend to file a motion requesting the Administrative Patent Judge to add the Hagen patents to Interference No. 103,228. Accordingly, we have included claims 23-35 in our reissue application, which claims cover aspects and embodiments of our invention to which we believe ourselves to also be entitled.

20. Herein presented, claim 23 recites that the load supporting protrusion of our head suspension assembly defined in claim 1 is offset with respect to a centerline of the air bearing slider. Support for this limitation is found in column 4, lines 37-40 of the '103 patent. On information and belief, the prior art teaches only mounting the slider off center with respect to the load supporting protrusion, not offsetting the protrusion or dimple from the centerline of the flexure. Claim 24 specifies the distance range for the offset. Support for claim 24 is also found in column 4, lines 37-40. Claim 25 recites the essential elements of our suspension (not including the slider, as in the assembly), corresponding substantially to claim 1 of U.S. Patent No. 5,428,490 of Hagen. By way of example, support for this structure is found throughout the '103 patent; specifically, the limitation respecting the partially etched flexure beams is found at column 4, lines 21-30. Claims 29-30 are directed to more specific embodiments respecting a flange integral with the load beam, which flange can accommodate an electrical wire. Support for these claims exists at column 4, lines 41-56. Claim 31 recites a method for making the suspension previously claimed, and corresponds substantially to claim 1 of U.S. Patent No. 5,434,731 of Hagen. Specifically, claim 31 includes the step of etching the connecting flexure beams to a thickness that is less than the thickness of the single planar

material which forms the load beam. Again, support for this claim exists at column 4, lines 21-30 of the '103 patent. Claim 32 further defines the partially etched flexure beams as having a particular thickness. Claim 33 adds the further step of forming an integral flange as discussed previously. Claim 34 includes the further step of attaching a damping element as described in column 4, lines 12-20. Finally, claim 35 adds the further step of offsetting the load supporting protrusion.

21. In view of the foregoing, it is respectfully submitted that U.S. Patent No. 5,282,103 should be reissued with the claims now presented or with claims commensurate in scope therewith.

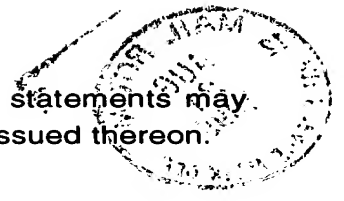
22. We believe ourselves to be the first, original and joint inventors of the subject matter which is described and claimed in United States Patent No. 5,282,103 ("the '103 patent") and in the foregoing specification for which invention we solicit a reissue patent. We do not know and do not believe this invention was ever known or used in the United States before our invention thereof.

23. We hereby claim the benefit under Title 35, United States Code, Section 120 of United States Application No. 958,516, filed October 7, 1992, now abandoned, and, insofar as the subject matter of each of the claims of this reissue application is not disclosed in our prior United States Application No. 958,516 in the manner provided by the first paragraph of Title 35, United States Code, Section 112, we acknowledge the duty to disclose all information known to us to be material to patentability as defined in Title 37, Code of Federal Regulations, Section 1.56 which became available between the October 7, 1992 filing date of the '516 application and the filing date of this reissue application.


24. WHEREFORE, we the undersigned petitioners respectfully request a reissue patent as herein sought for the purpose of adequately, clearly and fully protecting the disclosed invention to which we are entitled.

25. We, the undersigned petitioners, declare further that all statements made herein of our own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of

Title 18 of the United States Code and that such willful false statements may jeopardize the validity of the application or any reissue patent issued thereon.



Dated: 8/31/95

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ASSEMBLY FABRICATED WITH
INTEGRAL LOAD BEAM AND
FLEXURE

Group Art Unit:

Examiner:

Power of AttorneyHon. Commissioner of Patents and Trademarks
Washington, D.C. 20231

Sir:

33 The undersigned hereby appoint: Keith G. Askoff, Reg. No. 33,828; Aloysius T. C. AuYeung, Reg. No. 35,432; Bradley J. Bereznak, Reg. No. 33,474; Michael A. Bernadicou, Reg. No. 35,934; Roger W. Blakely, Jr., Reg. No. 25,831; William Donald Davis, Reg. No. 38,428; Daniel M. De Vos, Reg. No. 37,813; Scot A. Griffin, Reg. No. 38,167; David R. Halvorson, Reg. No. 33,395; Brian Don Hickman, Reg. No. 35,894; George W. Hoover II, Reg. No. 32,992; Eric S. Hyman, Reg. No. 30,139; Dag H. Johansen, Reg. No. 36,172; Stephen L. King, Reg. No. 19,180; Daniel C. Mallery, Reg. No. 33,532; Michael J. Mallie, Reg. No. 36,591; Kimberley G. Nobles, Reg. No. 38,255; Ronald W. Reagin, Reg. No. 20,340; James H. Salter, Reg. No. 35,668; William W. Schaal, Reg. No. P39,018; James C. Scheller, Reg. No. 31,195; Edward W. Scott, IV, Reg. No. 36,000; Maria McCormack Sobrino, Reg. No. 31,639; Stanley W. Sokoloff, Reg. No. 25,128; Allan T. Sponseller, Reg. No. 38,318; John C. Stattler, Reg. No. 36,285; David R. Stevens, Reg. No. 38,626; Edwin H. Taylor, Reg. No. 25,129; Lester J. Vincent, Reg. No. 31,460; Ben J. Yorks, Reg. No. 33,609; and Norman Zafman, Reg. No. 26,250; my attorneys; and Gary B. Goates, Reg. No. 35,159; Thomas X. Li, Reg. No. 37,079; or any of them, our attorneys, with full power of substitution and revocation, to prosecute this application, to make alteration or amendments therein, to receive the patent and to transact all business in the U.S. Patent and Trademark Office connected herewith.

Please address all correspondence to Bradley J. Bereznak, Blakely, Sokoloff, Taylor and Zafman, 12400 Wilshire Boulevard, Seventh Floor, Los Angeles, California 90025 (408) 720-8598.

Dated: 8/31/95By: Michael R. Hatch
MICHAEL R. HATCHDated: 8/31/1995By: Chak M. Leung
CHAK M. LEUNG



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For: MAGNETIC HEAD SUSPENSION)
ASSEMBLY FABRICATED WITH)
INTEGRAL LOAD BEAM AND)
FLEXURE)

Assent Of Assignee To Reissue

Hon. Commissioner of Patents and Trademarks
Washington, D.C. 20231

Sir:

The undersigned, by authority vested in him by READ-RITE CORPORATION, assignee of the entire interest in the above-identified Letters Patent, the invention described therein, and in any reissue thereof by assignment recorded at Reel 6513, Frames 442-443, hereby assents on behalf of the assignee to the accompanying application for reissue.

Dated: August 31, 1995

Rex S. Jackson
Vice President and General Counsel
READ-RITE CORPORATION